

39. (Reiterated) The method of Claim 38, wherein less than about 50% of the sodium in the fermentation medium is supplied as sodium chloride.

40. (Reiterated) The method of Claim 38, wherein the non-chloride sodium salt is selected from the group consisting of soda ash, sodium carbonate, sodium bicarbonate, sodium sulfate and mixtures thereof.

41. (Reiterated) The method of Claim 38, further comprising the step of maintaining the proper pH of the fermentation medium.

42. (Reiterated) The method of Claim 38, wherein the non-chloride sodium salt comprises sodium sulfate.

43. (Reiterated) The method of Claim 42, wherein the concentration of said sodium sulfate is greater than about 1 g/L.

44. (Reiterated) The method of Claim 42, wherein the concentration of said sodium sulfate is between about 1 g/L and about 50 g/L.

45. (Reiterated) The method of Claim 42, wherein the concentration of said sodium sulfate is between about 2 g/L and about 25 g/L.

46. (Reiterated) The method of Claim 38, wherein the culture medium contains the chloride concentration of less than about 500 mg chloride per liter of culture medium.

47. (Reiterated) The method of Claim 38, wherein the microorganisms are obtained from a marine or inland saline environment.

48. (Reiterated) The method of Claim 38, wherein the microorganisms are selected from the group consisting of algae, yeasts, bacteria, fungi and mixtures thereof.

49. (Reiterated) The method of Claim 38, wherein the microorganisms are selected from the group consisting of microorganisms which are capable of growth at a salinity level which results in a conductivity of from about 5 mmho/cm to about 40 mmho/cm.

50. (Reiterated) The method of Claim 38, wherein the microorganisms are selected from the group consisting of microorganisms which are capable of growth in 60% seawater or 60% artificial seawater.

51. (Reiterated) The method of Claim 38, wherein the microorganisms are selected from the group consisting of *Thraustochytrium*, *Schizochytrium* and mixtures thereof.

52. (Reiterated) The method of Claim 38, wherein the microorganisms have all of the identifying characteristics of an organism selected from the group consisting of ATCC Nos. 20888 and 20889, and mutants thereof, wherein said mutants have an omega-3 HUFA content of at least about 0.5% dry weight.

53. (Reiterated) A method for reducing corrosion of a fermentor during growth of microorganisms in a saline fermentation medium, said method comprising:

obtaining microorganisms from a saline environment;

growing the microorganisms in the fermentor comprising a culture medium in which one of the primary inorganic ions is sodium which is provided in the form of a non-chloride sodium salt, wherein the non-chloride sodium salt is selected from the group consisting of soda ash, sodium carbonate, sodium bicarbonate, sodium sulfate and mixtures thereof, and wherein the culture medium containing the non-chloride sodium salt as the primary source of sodium results in reduced fermentor corrosion compared to the culture medium containing sodium chloride as the primary source of sodium.

54. (Reiterated) The method of Claim 53, wherein the culture medium contains a chloride concentration of less than about 3 grams chloride per liter of culture medium.

55. (Reiterated) The method of Claim 53, wherein the culture medium contains a chloride concentration of less than about 500 mg chloride per liter of culture medium.

56. (Reiterated) The method of Claim 53, wherein the non-chloride sodium salt comprises sodium sulfate.

57. (Reiterated) The method of Claim 56, wherein the concentration of said sodium sulfate is greater than about 1 g/L.

58. (Reiterated) The method of Claim 53, wherein the microorganisms are obtained from a marine or inland saline environment.

59. (Reiterated) The method of Claim 53, wherein the microorganisms are selected from the group consisting of microorganisms which are capable of growth at a salinity level which results in a conductivity of from about 5 mmho/cm to about 40 mmho/cm.

60. (Reiterated) The method of Claim 53, wherein the microorganisms are selected from the group consisting of microorganisms which are capable of growth in 60% seawater or 60% artificial seawater.

61. (Reiterated) The method of Claim 53, wherein the microorganisms are selected from the group consisting of *Thraustochytrium*, *Schizochytrium* and mixtures thereof.

62. (Reiterated) The method of Claim 53, wherein the microorganisms have all of the identifying characteristics of an organism selected from the group consisting of ATCC Nos. 20888 and 20889, and mutants thereof, wherein said mutants have an omega-3 HUFA content of at least about 0.5% dry weight.

63. (Reiterated) A method for reducing corrosion of a fermentor during growth of microorganisms in a saline fermentation medium, said method comprising:

obtaining microorganisms from a saline environment;

growing the microorganisms in the fermentor comprising a culture medium in which one of the primary inorganic ions is sodium which is provided in the form of a non-chloride sodium salt comprising sodium sulfate, wherein the culture medium contains a chloride concentration of less than about 3 grams chloride per liter of culture medium, and wherein the culture medium containing the non-chloride sodium salt as the primary source of sodium results in reduced fermentor corrosion compared to the culture medium containing sodium chloride as the primary source of sodium.

64. (Reiterated) The method of Claim 63, wherein less than about 50% of the sodium in the fermentation medium is supplied as sodium chloride.

65. (Reiterated) The method of Claim 63, wherein the concentration of said sodium sulfate is greater than about 1 g/L.

66. (Reiterated) The method of Claim 63, wherein the microorganisms are selected from the group consisting of *Thraustochytrium*, *Schizochytrium* and mixtures thereof.

67. (Reiterated) The method of Claim 63, wherein the microorganisms have all of the identifying characteristics of an organism selected from the group consisting of ATCC Nos. 20888 and 20889, and mutants thereof, wherein said mutants have an omega-3 HUFA content of at least about 0.5% dry weight.

68. (Reiterated) A method for reducing corrosion of a fermentor during growth of microorganisms in a saline fermentation medium, wherein the microorganisms are selected from the group consisting of *Thraustochytrium*, *Schizochytrium* and mixtures thereof, said method comprising:

growing the microorganisms in the fermentor comprising a culture medium in which one of the primary inorganic ions is sodium which is provided in the form of a non-chloride sodium salt comprising sodium sulfate, wherein the culture medium contains a chloride concentration of less than about 3 grams chloride per liter of culture medium, and wherein the culture medium containing the non-chloride sodium salt as the primary source of sodium results in reduced fermentor corrosion compared to the culture medium containing sodium chloride as the primary source of sodium.

69. (Reiterated) The method of Claim 68, wherein less than about 50% of the sodium in the fermentation medium is supplied as sodium chloride.

70. (Reiterated) The method of Claim 68, wherein the concentration of said sodium sulfate is greater than about 1 g/L.

71. (Reiterated) The method of Claim 68, wherein said microorganisms have all of the identifying characteristics of an organism selected from the group consisting of ATCC Nos. 20888 and 20889, and mutants thereof, wherein said mutants have an omega-3 HUFA content of at least about 0.5% dry weight.

72. (Reiterated) The method of Claim 38, wherein the microorganisms are selected from the group consisting of members of the order Thraustochytriales.

73. (Reiterated) The method of Claim 53, wherein the microorganisms are selected from the group consisting of members of the order Thraustochytriales.

74. (Reiterated) The method of Claim 63, wherein the microorganisms are selected from the group consisting of members of the order Thraustochytriales.

75. (Reiterated) The method of Claim 63, wherein the microorganisms are euryhaline.

76. (Reiterated) The method of Claim 38, wherein the microorganisms produce lipids, and further comprising the step of recovering lipids from the microorganisms.

77. (Reiterated) The method of Claim 53, wherein the microorganisms produce lipids, and further comprising the step of recovering lipids from the microorganisms.

78. (Reiterated) The method of Claim 63, wherein the microorganisms produce lipids, and further comprising the step of recovering lipids from the microorganisms.

79. (Reiterated) The method of Claim 68, wherein the microorganisms produce lipids, and further comprising the step of recovering lipids from the microorganisms.

80. (Reiterated) The method of Claim 38, wherein the microorganisms grow in an environment where sodium chloride is the primary source of sodium.

81. (Reiterated) The method of Claim 53, wherein the microorganisms grow in an environment where sodium chloride is the primary source of sodium.

82. (Reiterated) The method of Claim 63, wherein the microorganisms grow in an environment where sodium chloride is the primary source of sodium.

83. (Reiterated) The method of Claim 68, wherein the microorganisms grow in an environment where sodium chloride is the primary source of sodium.

84. (Reiterated) The method of Claim 38, wherein the microorganisms are euryhaline.

85. (Reiterated) The method of Claim 53, wherein the microorganisms are euryhaline.